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ABSTRACT

Earlier research on death anxiety using the 34-item scale developed by Nehrke-Templer-Boyar (NTB) indicated that females and younger persons have significantly higher death anxiety. To simplify a death anxiety scale for use with different age groups, and to determine the conceptual factors actually measured by the scale, a revised 25-item true/false measure was administered to 599 persons aged 16 to 84. With a possible range of 25 to 75 (higher score indicating increased death anxiety), the range of scores from this sample was 27 to 71 with a group mean of 47.5. Preliminary findings confirmed that women and younger people had the highest death anxiety, while older persons had significantly less. Those with experience of death had lower anxiety; those with less education had higher death anxiety. Whites had significantly higher anxiety than blacks. Four principal factors were indicated: (1) fear of the uncertainty of death and loss of personal control; (2) fear of pain; (3) fear of the dying process itself; and (4) fear of burial and decomposition. It is suggested that four additional items be dropped from the scale to eliminate extraneous afterlife concepts. (JAC)

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Revision and Factor Analysis of a Death Anxiety Scale

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Introduction

This report concludes the third part of a project designed to further revise a scale developed to measure death anxiety. Earlier parts of this study have been reported to previous meetings of the Gerontological Society (Thorson & Perkins, 1977) and have appeared in the literature (Thorson, 1977; Marshall, 1982).

Nehrke (1973, 1974) combined separate scales designed to measure attitudes toward death that were developed by Templer (1970) and by Boyar (1964), adding one item of his own construction. The result was a 34 item true-false fear of death scale. Our earlier research reported on use of the Nehrke-Templer-Boyar (NTB) death anxiety scale with a sample of 659 adults and a factor analysis of that data. Findings of the earlier study indicated significantly higher death anxiety on the part of females and younger persons. Suggestions were made for revision of the NTB scale based on the factor analysis.

Research Objective

The objective of the present study has been to simplify a death anxiety scale appropriate for use with different age groups, and to determine--and, through revision, perhaps modify--the conceptual factors actually measured by the scale. This was brought about by a realization that, while a variety of techniques exist to assess scale reliability, there would really be no entirely acceptable method for measuring the scale's validity. That is, while an argument for the validity of the scale or its several revisions might be made using correlational data between it and a number of other instruments, there really would be no direct method

for the researcher to compare the results of any completed scale with an individual's actual fear of death. Realizing this, Nehrke, in his earlier studies (1973, 1974) compared scale scores with a Likert item: "My overall feeling toward death can be characterized as..." with nine possible responses ranging from "fearful" to "look forward to."

While such a comparison is useful, we felt that it might imply a certain unidimensionality to the concept of death anxiety. We would maintain that attitudes toward death and dying are made up of a number of different concepts: fear of the unknown, of pain, of isolation, the loss of loved ones and friends, of control, of decomposition, and of the finality of death. That is, one's concept of death is multidimensional. While these conceptual dimensions would of course vary by individual in terms of relative importance, we could at least seek some reasonable approach to better understanding the interplay of these factors. Given the frustration of lacking a means to assess scale validity, perhaps we could at least determine some of the conceptual framework of the scale, and perhaps adjust it if appropriate.

We recognize the limitations in assessing an attitude, or group of attitudes, that may not only be continually changing but are also quite possibly compounded by social desirability factors. We would at this point caution other researchers not to expect applications of these scales to individuals to have any great precision, nor should a death anxiety measure be used as a diagnostic tool. Rather, we sought to develop a more reliable instument for looking at broad trends within and between groups. Further, since none of these samples were randomly

drawn, conclusions remain speculative.

Earlier Research

In the previously reported phase of this study (Thorson & Perkins, 1977), a factor analysis of the NTB was discussed, based on its administration to a convenience sample of 659 adults. There was some evidence during the administration of the instrument that the very oldest respondents were having some trouble completing the scale. Nehrke (1973, 1974) had noticed this previously, and had changed the original agree-disagree Likert responses for the 34 items to a true-false format in an effort to simplify the test. This proved to be somewhat successful.

We felt that shortening the instrument might further simplify it. A factor analytic procedure would give a clustering of the items so that those items loading on several factors might be deleted. Also, those factors having multiple items might be examined to determine whether or not they contributed an appropriate percentage of the variance measured by the scale overall.

The factor analysis of the first sample's responses, using the Varimax procedure, indicated four principal factors measured by the NTB: 1) fear of isolation and immobility, 2) fear of pain, 3) fear of the finality of death, and, 4) fear of burial and decomposition. Our earlier report (Thorson & Perkins, 1977) made specific recommendations for a revision of the NTB: to reduce some of the items loading on the first factor, to eliminate some extraneous items, to increase the number of items loading on the fear-of-pain factor, eliminate a double-barreled

item, and to eliminate or rephrase four of the items that had multiple low-level loadings on several factors.

Methodology and Results of the Present Study

The resultant revised scale had 25 items in a true-false format. It was to be scored with the value one equaling a non-anxiety response, two for blank items, and three was scored for anxiety responses, thus giving a possible range of 25 to 75, with the higher score indicating higher death anxiety.

The revised scale was completed by a number of convenience samples giving a total of 599 usable responses. Subjects ranged in age from 16 to 84, 19% were male, 10.6% were non-white, 17% were over age 60, and 63% had living parents. The range of scale scores for the total group was from 27 to 71, with a group mean of 47.5 and a standard deviation of 9.2. The standardized item alpha of reliability for the revised scale was .80370.

Preliminary findings were similar to the earlier studies using the NTB: females having expressed significantly greater death anxiety, older persons significantly less, and scale scores linear by age: the younger the respondent, the higher the score (see Table 1). A few new things were found using the revised scale: those having experience with death --no living parents--having significantly lower death anxiety; those with less education--high school but no college--having significantly higher death anxiety, and whites having significantly higher death anxiety than non-whites (because of the demographic pattern of the area

where these data were gathered, it is safe to say that virtually all those categorized as "non-white" were in fact black). No urban-rural differences were found.

A Varimax rotated factor matrix indicated four principal factors for the 25-item revised scale; this time the principal one being fear of the uncertainty of death and the loss of personal control, followed by fear of pain, the dying process itself, and burial and decomposition. The goals of reducing the loading on isolation and increasing the loadings on pain and loss of control had been achieved. Also, the instrument was somewhat simpler, having been reduced from 34 to 25 items. Fewer incomplete responses from older subjects were received.

Intercorrelations of scale items with each other and with the scale as a whole were also calculated (see Table 3), and these data provided further information, along with the factor analysis, for continued fine-tuning of the scale. We are still not entirely satisfied with the revised NTB, and would recommend deletion of four additional items, which whould have the effect of further simplifying the instrument and increasing the alpha of reliability even more:

Item #

2. "Not knowing what the next world is like troubles me."

This item does have a meaningful, if negative, correlation with the scale itself and several other scale items, but the reliability analysis of the data indicates that the Cornbach alpha of reliability would go from .80370 to .83255 if this item were deleted.

13. "I am not at all concerned over whether or not there is an afterlife." Only an r = .21 with the rest of the scale, and hardly any correlation with any other item. The Cornbach alpha would not be appreciably affected (.80370 to .80100) with the deletion of this item.

16. "I am looking forward to a new life after I die." Again, only r = .22 with the scale itself, nothing in particular with other items, multiple low-level loadings with three out of the four factors, and no real affect on reliability (.80370 to .80199) if it were dropped.

24. "I will leave careful instructions about how things should be done after I am gone." Only a correlation of .22 with the scale, not much with other items, no significant loadings on any factor, and not much change in the reliability alpha (.80370 to .80343) if the item were deleted.

Conclusion

Dropping items 2, 13, 16, and 24, then, would leave a 21 item death anxiety scale with a very acceptable level of reliability that is somewhat more simple than the original NTB and the 25-item revision. It would delete afterlife concepts that are eviduently entraneous to the rest of the scale, and would focus on the concepts of fear of the finality and loss of internal control associated with death, fear of the pain associated with death, and fear of burial and decomposition.

Factor analysis seems to be an effective tool for analyzing a scale, allowing the researcher to probe into the conceptual basis of each item and its tendency to cluster with other items measuring the same constructs.

Table 1

Sample Characteristics
and Scale Score Differences

Number	Group	Scale Mean
92	Males	45.5652
486	Females	47.8621
		47.4965

(ANOVA indicated a significant difference, F=4.723, p=.0302)

101	Ages 16 - 19	54.7426
228	Ages 20 - 29	47.2368
135	Ages 30 - 59	46.0074
99	Ages 60+	43.1212

(ANOVA: F=33.263, p < .0001; Duncan multiple range procedure indicated a significant difference (p < .05) between three subsets: the youngest, the oldest, and the two middle adult categories)

	Both parents living?	
358	Yes	48.7626
221	No	45.2353

(ANOVA: F=20.373, p < .0001)

131	High school	50.3664
257	Some college	47.1556
178	College grad	45.8371

(ANOVA: F=9.460, p < .0001; Duncan multiple range test indicates significant differences (p < .05) between the high school group and the other two groups)

535	White	47.7028
59	Non-white	44.2051

(ANOVA: F=5.186, p=.0231)

Table 2
Varimax Rotated Factor Matrix of a 25 Item Death Anxiety Scale

Item	Factor 1	2	3	4
1. I fear dying a painful death	.13	.75	.30	-.09
2. Not knowing what the next world is like troubles me.	-.69	-.13	-.08	.00
3. The idea of never thinking again after I die frightens me.	.72	.03	.06	-.11
4. I am not at all anxious about what happens to the body after burial.	.11	-.15	.19	.67
5. Coffins make me anxious.	.24	.14	.20	.09
6. I hate to think about losing control over my affairs after I am gone.	.64	.01	.09	.18
7. Being totally immobile after death bothers me.	.74	.02	.04	.22
8. I dread to think about having an operation.	.12	.52	.03	.06
9. The subject of life after death troubles me greatly.	.59	.05	-.05	.13
10. I am not afraid of a long, slow dying.	-.01	.12	.57	.08
11. I do not mind the idea of being shut into a coffin when I die.	.15	.07	.09	.65
12. I hate the idea that I will be helpless after I die.	.74	.03	.04	.14
13. I am not at all concerned over whether or not there is an after life.	.13	-.29	.62	-.08
14. Never feeling anything again after I die upsets me.	.71	.11	.07	.05
15. The pain involved in dying frightens me.	.25	.71	.24	-.01
16. I am looking forward to a new life after I die.	.00	.37	-.30	.43
17. I am not worried about ever being helpless.	.07	.12	.41	.02
18. I am troubled by the thought that my body will decompose in the grave.	.59	.14	.02	.39
19. The feeling that I will be missing out on so much after I die disturbs me.	.58	.20	.05	.07
20. I am worried about what happens to us after we die.	.71	.15	.20	.06
21. I am not at all concerned with being in control of things.	.13	.01	.47	.16
22. The total isolation of death is frightening to me.	.71	.27	.16	.11
23. I am not particularly afraid of getting cancer.	.02	.23	.56	.20
24. I will leave careful instructions about how things should be done after I am gone.	.17	.19	-.14	.01
25. What happens to my body after I die does not bother me.	.24	.02	.18	.61

Table 3

Intercorrelations of a 25 Item Death Anxiety Scale (N=599)

Item No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
DAS	.44	-.50	.54	.36	.34	.59	.66	.33	.47	.29	.42	.63	.21	.62	.51	.22	.28	.64	.57	.66	.36	.72	.39	.22
1.		-.23	.14	.00	.13	.11	.14	.27	.11	.17	.08	.14	.04	.19	.58	.09	.17	.17	.18	.25	.14	.27	.23	.09
2.			-.48	-.13	-.21	-.35	-.45	-.16	-.48	-.06	-.18	-.40	-.09	-.42	-.28	-.03	-.09	-.37	-.32	-.59	-.11	-.52	-.06	-.08
3.				.07	.15	.34	.50	.11	.29	.09	.07	.47	.03	.49	.16	.03	.14	.34	.38	.46	.13	.50	.04	.12
4.					.07	.15	.20	.05	.12	.09	.31	.18	.12	.11	.05	.06	.03	.21	.09	.15	.13	.14	.12	-.04
5.						.16	.19	.03	.08	-.01	.16	.10	.11	.21	.21	.00	.02	.21	.18	.17	.08	.30	.17	.02
6.							.54	.16	.38	.07	.18	.52	.12	.39	.20	.05	.08	.40	.41	.34	.15	.41	.13	.13
7.								.12	.41	.08	.25	.59	.06	.53	.21	.14	.13	.49	.39	.48	.15	.46	.10	.08
8.									.14	.08	.09	.12	-.03	.11	.24	.05	.01	.13	.14	.15	.03	.23	.14	.04
9.										-.03	.14	.37	.02	.33	.19	.07	.02	.36	.28	.44	.14	.37	.10	.04
10.											.09	.06	.16	.10	.13	.04	.21	.06	.07	.13	.13	.10	.26	-.05
11.												.18	.00	.21	.10	.11	.12	.31	.11	.18	.14	.23	.10	.05
12.													.06	.54	.25	.05	.06	.48	.38	.47	.17	.47	.10	.13
13.														.05	.05	-.19	.03	.09	.08	.17	.11	.08	.17	-.06
14.															.24	.08	.11	.39	.38	.48	.06	.55	.12	.07
15.																.10	.11	.26	.27	.31	.12	.35	.21	.08
16.																	.04	.16	.13	.08	.00	.08	.01	-.02
17.																		.05	.07	.11	.21	.16	.10	-.04
18.																			.42	.46	.10	.48	.13	.07
19.																				.39	.11	.47	.09	.08
20.																					.17	.59	.15	.09
21.																						.18	.19	.02
22.																							.17	.18
23.																								.02
24.																								

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